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ABSTRACT

A 1968 study by Justiz developed the first reliable measure of general teaching ability at the secondary level. This paper describes the application of that measure to junior college instructors. When the teacher's subject knowledge and his students' ability levels are held constant, teaching ability may be measured by testing the students for the skills specified by the instructor's educational objectives. The procedure for conducting the study is presented in detailed form so that it may be utilized by researchers in other junior colleges. All test and questionnaire forms used in the study are reproduced. (MS)

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IDENTIFYING THE EFFECTIVE INSTRUCTOR

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IDENTIFYING THE EFFECTIVE INSTRUCTOR

Introduction

For a variety of reasons pedagogical skills have rarely been measured with any great degree of accuracy. At all levels of education, instructors are selected, employed, evaluated, and rewarded or dismissed without anyone really knowing how well they can teach. Some of the reasons for this failure to assess teaching have been reported in one Clearinghouse monograph;* others will be explored in forthcoming publications.

If teaching is to be measured, adequate designs and procedures are needed. Professors John D. McNeil, W. J. Popham, and others in the UCLA Graduate School of Education have developed certain methods. The design reported here amplifies their work.

This Topical Paper is the ninth in a series of research formats prepared and distributed by the ERIC Clearinghouse for Junior Colleges. Each paper can be used as the design for a study that can stand on its own or can be linked with other research efforts. We hope that the Topical Papers will stimulate much-needed research in the junior colleges. Investigators may receive further information on this and other designs by writing to the Clearinghouse.

Edward F. O'Connor, Jr. is President of the UCLA Graduate Student Association and is currently writing his dissertation in Educational Statistics.

Thomas B. Justiz received his doctorate degree at the UCLA Graduate School of Education and has written educational specifications for various public school systems.

Arthur M. Cohen
Principal Investigator
ERIC Clearinghouse for
Junior Colleges

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*Arthur M. Cohen and Florence B. Brawer, Measuring Faculty Performance, Washington: American Association of Junior Colleges, 1969.

IDENTIFYING THE EFFECTIVE INSTRUCTOR

The junior college instructor is often hired and evaluated on the basis of his in-depth knowledge of his subject field. Yet teaching requires more than subject knowledge. Somehow, this knowledge must be transmitted to, and incorporated by, the students. What skills and/or personality characteristics enable teachers to accomplish this task? Before we can answer this question, we must have a definition and a reliable measure of what we mean by transmitting knowledge.

In a recent study at the secondary level, Justiz identified more and less effective student teachers on the basis of their ability to produce low-order problem-solving skills in their students in two different subjects.* To control for the teachers' subject knowledge, the researcher chose two fields with which the teachers were relatively unfamiliar. The study reported the first reliable differences between more and less competent teachers in the public schools and developed the first reliable measure of general teaching ability (GTA)--defined as the teacher's ability to produce in his students the skills specified by his educational objectives.

This Paper is concerned with application of the Justiz procedure to junior college instructors. For a more detailed explanation of the theoretical background, refer to the dissertation already cited.

Procedural Rationale

If subject knowledge and general teaching ability combine to produce

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*Justiz, T.B. A Method for Identifying the Effective Teacher, Ed.D. dissertation, University of California, Los Angeles, August 1968.

specific skills in the students, and if the teacher's subject knowledge and his students' ability levels can be held constant, then an instructor's general teaching ability can be measured by testing his students for the skills specified by the instructor's educational objectives. This design focuses attention on the ends of instruction--i.e., student outcomes--on the rationale that instructors cannot be evaluated in the absence of student achievement of specified outcomes.

The instructor's subject knowledge can be held constant by giving the instructor brief preparation in skills with which they are unfamiliar. Their task is to teach these skills to a class of students during a single class period. The instructors are ranked on the basis of their class's performance on tests given at the end of the class period. At least two different subjects, each taught to a different class, are required to insure that the rankings are reliable. The students must be randomly assigned to the special classes in order to insure that the classes are statistically equivalent at the beginning of instruction.

The special classes must be limited to a single class period to avoid seriously disrupting the normal curriculum of the junior college. Because of this severe time limitation, the skills taught must be relatively simple. The authors do not wish to imply that teaching of simple skills is identical with the teaching of more complex skills (although we suspect that the correlation is rather high), nor that the teaching of skills is the sole function of schools or colleges. More abstract goals such as appreciation or attitude change can be appropriate where they can be specified in sufficient detail to allow the teacher and the evaluator to know when these goals are being achieved.

Procedure

The following procedure is presented in "do-it-yourself" form so that researchers in several different junior colleges can perform the study with a minimum of difficulty.*

A. Data Collection Procedures

1. Prepare a lesson kit in two or more different subject areas likely to be unfamiliar to your instructors. Each kit should specify the particular skill on which the students will be tested at the end of the instruction period. The difficulty level of the skill should be chosen so that approximately half the students will be reasonably proficient on the post-tests. In addition, the kit should include sufficient information to teach the skill to the instructor. The kit should also contain some material related to general topics but relevant to the specific objective. This is to insure that the instructor cannot use the kit to teach his class without a judicious selection of the appropriate materials. Appendix A and Appendix B present the two kits used in the Justiz study. These kits were validated for 11th- and 12th-grade students and may or may not be valid for junior college students.

2. Prepare a post-test for each of the kits outlined in step 1. These post-tests should test the specific objective presented in the kit--no more and no less. The post-tests used in the Justiz study are presented in Appendices A and B.

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*The authors would appreciate hearing from anyone who conducts a study of this type.

3. Arrange to have ten or more instructors available to teach the subject you have chosen. The instructors must be available at the same time to allow for proper random assignment of the students, but the different lessons need not be taught on the same day.
4. Arrange to have 15 to 30 students available for each instructor in the project. Devise a way to randomly assign the students to the different instructors. Either randomly re-assign the students at the end of the first lesson, or randomly assign a fresh group of students to each instructor. The purpose of this second randomization is to insure that the sampling errors inherent in any randomization do not favor the same instructors for both sessions. One possible procedure is to choose a time for the study when most of the instructors involved have classes scheduled. The students can then be randomly assigned by having the instructors give each student a card telling him to go to another room where a different instructor will give him a lesson. At the end of the first lesson, the new instructor hands the student a second card giving him new instructions.
5. Schedule a meeting with the instructors for the day before they are to present the lessons. Make sure at this meeting that none of the instructors is familiar with the general subject to be taught in the lessons. (For an example, see Form C-1 in Appendix C.) Explain the project to the instructors and give them the kits and a set of general instructions (Form C-2). If

the second lession is scheduled for a different day from the first lesson, give the second kit to the instructors 24 hours before the second lesson is scheduled.

6. On the day of the lessons, make sure that the students are properly assigned and that the instructors teach for no more than the alloted time. When the time is up, give each instructor enough post-tests for his class and a set of instructions for administering them (C-3).
7. Sometime before the instructors present their lessons, have the dean of instruction or another appropriate administrator rank the instructors on their ability to teach (C-4). This will allow you to compare his rankings with those obtained empirically.
8. You may wish to obtain other information from or about your instructor. Forms C-5 and C-6 are two possibilities.

B. Data Analysis

1. Compute the class means for each instructor for each lesson and enter the figures on Form C-7 in columns A and B.
2. Rank the instructors according to their class performance on lesson one and lesson two and enter the figures in columns C and D.
3. Record the dean's rankings in column E.
4. Subtract column D from column C and enter the difference in column F. Repeat the process for C and E and for D and F; enter the results in columns G and H.

5. Add columns F, G and H and enter the totals at the bottom. If the previous steps were performed correctly, all three sums should equal zero.
6. Square the figures in columns F, G and H, and enter the results in columns I, J and K.
7. Add columns I, J and K and enter the totals at the bottom.
8. Compute $N(N^2-1)$ where N equals the number of instructors and enter the result on page 2 of C-7.
9. Enter the sum totals for columns I, J and K in the designated places and multiply by 6.
10. Perform the indicated division by $N(N^2-1)$.
11. The resulting three figures are the reliability coefficient and the correlations between the dean's rankings and the rankings on lesson one and lesson two.

APPENDIX A

THE PUNCHED-CARD KIT

Practice Exercise for Producing Student Achievement Using a Punched-card Computer Objective

Instructions

Prepare a 30-minute lesson for your students as follows: Read the Objective and Related Subject Matter, and examine the Practice Exercises. Then prepare to teach the Objective in the manner in which you are most effective. You may select Practice Exercises from the following pages, or prepare your own, whichever you feel are most appropriate to the Objective. You can make notes on these assignment sheets if you wish. Please record the approximate time used for preparation of your lesson:_____.

Objective

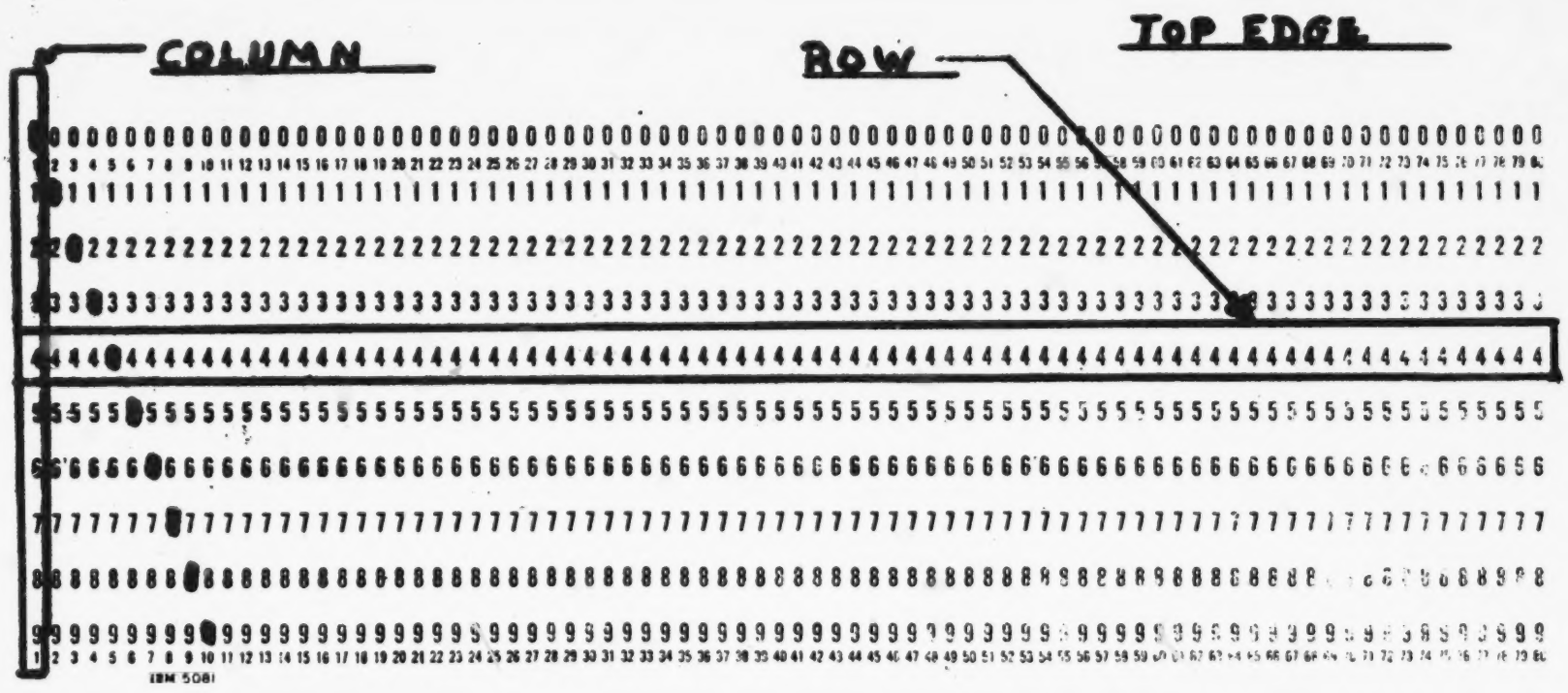
Given: A punched card, and a diagram of computer cores on which the digits 0 to 9 are recorded:

Students will be able to: Translate the digits 0 to 9 from the decimal number system, used with the punched card, to the binary number system, used with the computer cores (and vice versa).

Related Subject Matter

The punched card is now a common device for storing data and for transmitting data to a computer. High schools use punched cards as class cards at the beginning of each term. Telephone, gas, and oil companies bill their customers with them.

Look at the sample punched card below. Each hole in a punched card represents one number to a computer. A computer cannot "read" numbers the way we do, but it can "read" holes in a punched card photoelectrically.



A standard convention is used for representing the numeric digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 in a punched card. The punched card is arbitrarily divided into 80 vertical COLUMNS and 10 horizontal ROWS to represent the digits 0 to 9. COLUMNS are numbered from left to right, from 1 to 80 (at the bottom and near the top of the punched card). ROWS are numbered from top to bottom, from 0 to 9.

As a card enters the computer, the computer "reads" the card, COLUMN by COLUMN until it comes to a hole. The distance from the LEFT EDGE of the card to the hole tells the computer which COLUMN the hole is in. The computer then measures the distance from the TOP EDGE of the card to the hole, to find out which ROW the hole is in. The numerical value of the hole is the ROW number. For example, in the sample punched card, a 1 is punched in COLUMN 2, a 4 is punched in COLUMN 5, and a 7 is punched in COLUMN 8. The higher values (7, 8 or 9) are in the ROWS near the BOTTOM EDGE of the card.

Notice that there is only one number punched in each column of the card. It is possible for only 80 digits to be stored in the card at one time. Only ten digits (0 to 9) have been stored in the sample punched cards.

In order for a computer to "remember" the holes it has seen in the punched card, it must store each decimal digit, which the hole represents, inside the computer. Each decimal digit is recorded inside the computer using the binary number system. A set of only 4 binary computer cores is required to store all the digits from 0 to 9 as compared with 10 ROWS in the punched card.

Look at the 10 sets of 4 cores below. Each core is represented by a ⊙ . The cores are really ferromagnetic rings which can be turned "on" by electricity. When a core is turned "on" it looks like this ◉ , when it is "off" it looks like this ⊙ . Different combinations of "on" and "off" cores can represent all the decimal digits 0 to 9, as follows: In each set of 4 cores, the top core represents an 8 and the bottom core represents a 1. The two middle cores represent a 2 and a 4 respectively. The decimal digit 1, 2, 4 or 8 is represented when one of these cores in a SET is turned "on." The numbers 3, 5, 6 and 9 are represented when the two cores in a SET, which add up to these numbers, are turned "on." The number 0 is represented when all cores are "off." The number 7 is represented when the 1, 2 and 4 cores are turned "on." Here is a summary of the 0 to 9 digits, represented by the magnetic computer cores:

The digit 0 is represented when all cores are "off."
The digit 1 is represented when the 1 core is "on."
The digit 2 is represented when the 2 core is "on."
The digit 3 is represented when the 1 and 2 cores are "on."
The digit 4 is represented when the 4 core is "on."
The digit 5 is represented when the 1 and 4 cores are "on."
The digit 6 is represented when the 2 and 4 cores are "on."
The digit 7 is represented when the 1, 2 and 4 cores are "on."
The digit 8 is represented when the 8 core is "on."
The digit 9 is represented when the 1 and 8 cores are "on."

Top Core = "8" when "on"

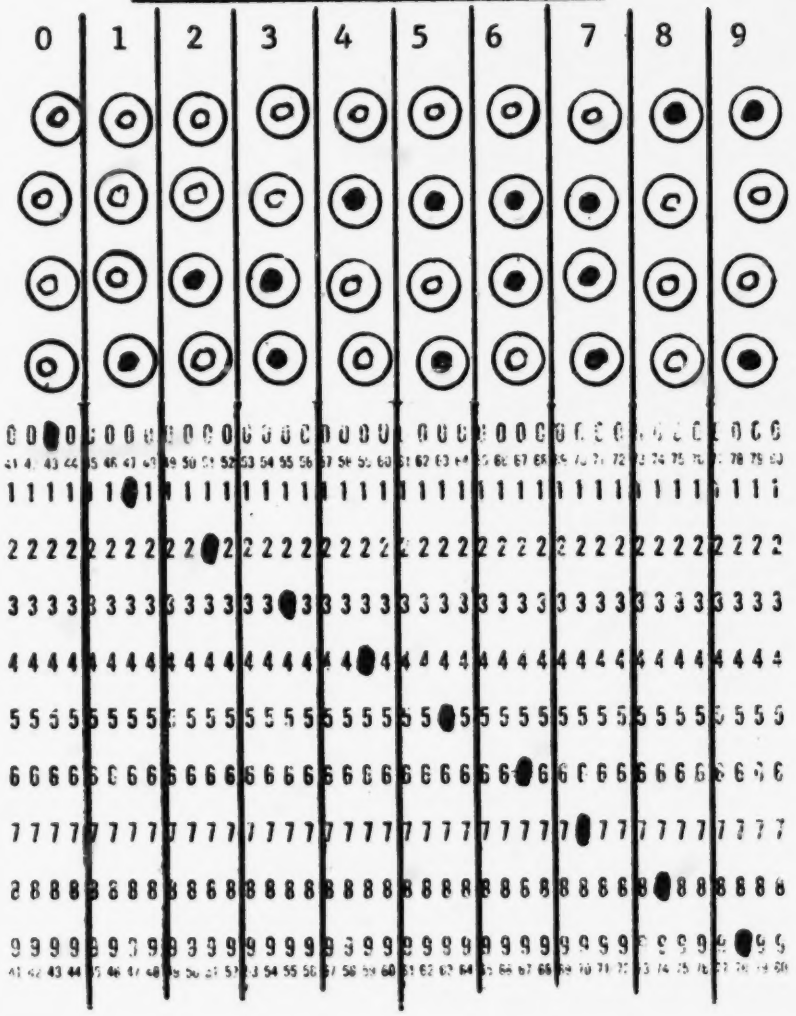
= "4" when "on"

= "2" when "on"

Bottom Core = "1" when "on"

The digit (0 to 9) represented in each column of the partial punched card at the right is shown in binary form by the core set directly <u>above</u> the card column.

DIAGRAM OF COMPUTER CORES



Practice Exercises

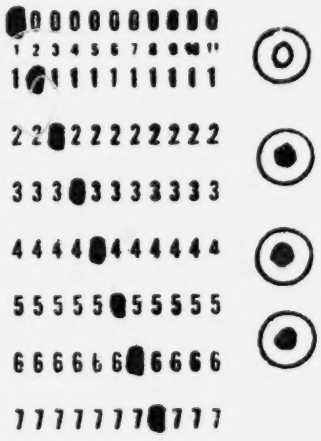
A. True or False:

1. 80 sets of cores are required to store 80 columns of digits. (T)
2. The computer knows which row it is reading by measuring the distance from the left-hand edge of the card to the row. (F)
3. A punched card can store a maximum of 80 numeric digits because it has only 80 columns. (T)
4. A 9 is the highest number that can be represented by a single set of 4 magnetic cores. (T)

B. Multiple Choice:

1. 4 magnetic cores are equivalent to ___ rows in a punched card. (10) 2 3 8 5
2. The largest number that the lower 3 cores will store is ____. 9 8 (7) 6 5
3. It would take ____ cores to store 67 columns of digits. 67 670 76 (268) 134
4. The largest number that 3 sets of cores could store is ____. (999) 9 111 444 888

C. Multiple Choice:



1. The portion of a punched card at the left has a ___ digit punched in card column 6. 2 3 4 (5) 6
2. There are ___ card columns in a punched card. 40 50 70 (80) 90
3. There are ___ numeric rows in a punched card. 4 6 8 (10) 12
4. The number represented by the set of magnetic cores at the left is ___. 5 (7) 8 2 3

D. True or False:

1. Each column in the card is equivalent to a set of 4 magnetic cores. (T)
2. The computer knows which column it is reading by measuring the distance from the top edge of the punched card to the column. (F)
3. Cores can store any digit (from 0 to 9) that is punched in a card column. (T)
4. If 45 numeric digits were punched in a card, it would require a total of 180 cores in the computer to store the 45 digits. (T)

E. Multiple Choice:

Look at the punched card and the computer cores below:

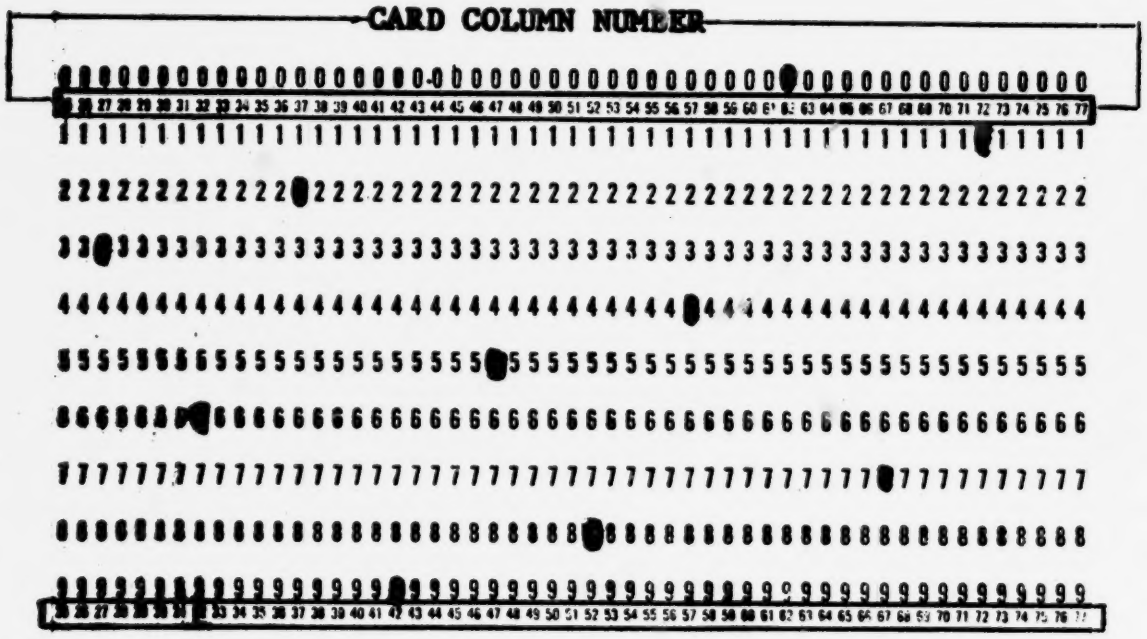
1. Core Set 1 represents the numeric digit in Card Column ___.
   32 37 42 52 (62)

2. Core Set 3 represents the numeric digit in Card Column ___.
   (72) 42 32 52 47

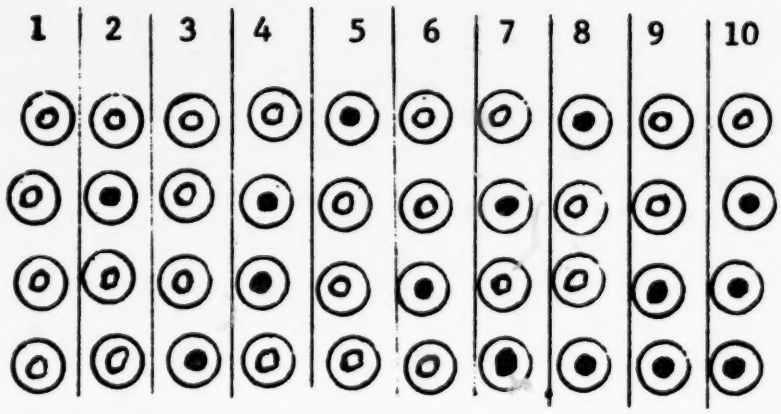
3. Core Set 4 represents the numeric digit in Card Column ___.
   72 47 (32) 67 37

4. Core Set 8 represents the numeric digit in Card Column ___.
   32 37 (42) 47 57

etc., etc.



CORE SET NUMBER



F. Multiple Choice:

1. A set of four magnet cores can store as many digits as can be stored in ___ rows of a punched card.
   (10) 2 3 1 5

2. It would take ___ sets of cores to store 43 columns of digits.
   (43) 214 172 178 256

3. The bottom two cores will store any of the digits up to ___.
   9 8 (3) 6 5

4. 72 cores could represent ___ card columns of digits.
   72 (18) 9 36 720

G. Multiple Choice:

1. The highest number that two sets of cores can store is ___.
   (99) 100 88 77 11

2. Ten rows in a punched card are the equivalent of ___ cores.
   10 8 6 (4) 3

3. The bottom core will store any of the digits up to ___.
   9 7 3 (1) 0

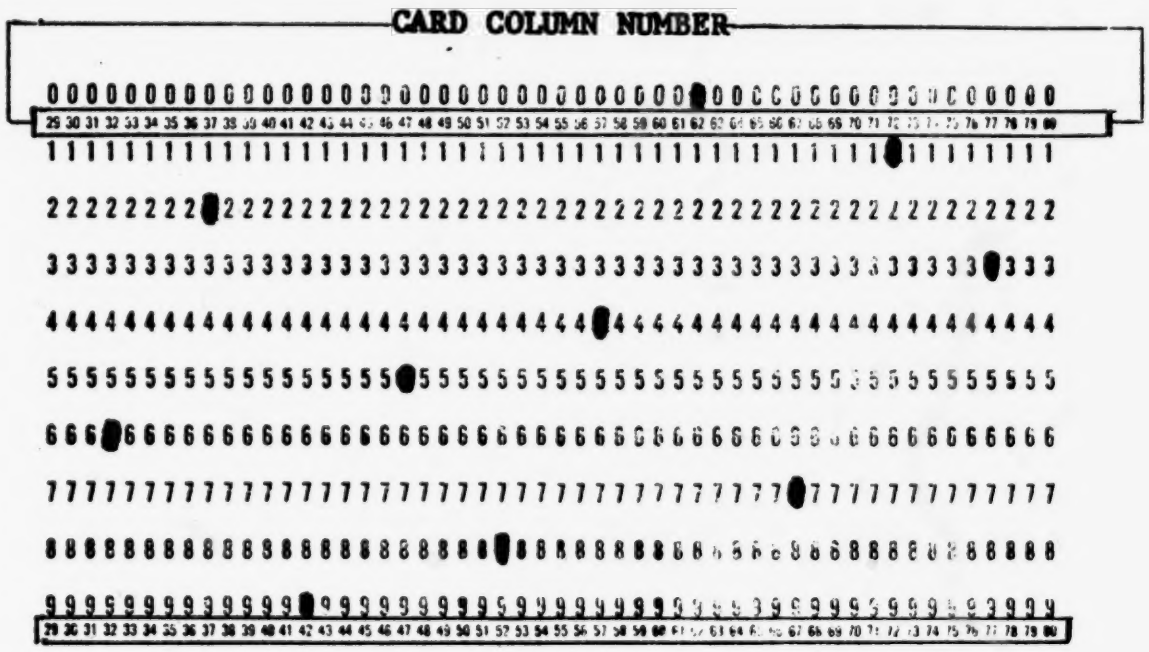
4. 16 cores can represent ___ card columns of digits.
   16 32 64 8 (4)

NAME_____ AGE_____ GRADE_____

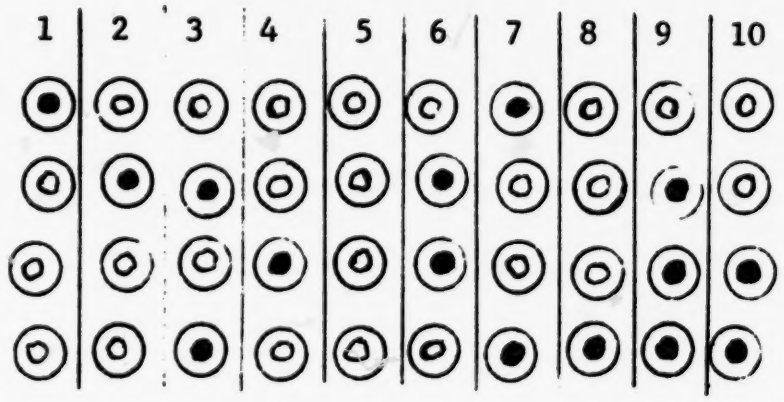
SCHOOL_____ INSTRUCTOR_____

There are 10 card columns with numeric digits punched in them in the punched card below. For each of the 10 card columns, find the core set which represents the same numeric digit as the one contained in the card column, and answer the following questions:

1. Core Set Number 1 represents the digit in Card Column Number _____
2. Card Column Number 77 represents the digit in Core Set Number _____
3. Core Set Number 3 represents the digit in Card Column Number _____
4. Card Column Number 57 represents the digit in Core Set Number _____
5. Core Set Number 4 represents the digit in Card Column Number _____
6. Card Column Number 32 represents the digit in Core Set Number _____
7. Core Set Number 8 represents the digit in Card Column Number _____
8. Card Column Number 62 represents the digit in Core Set Number _____
9. Core Set Number 9 represents the digit in Card Column Number _____
10. Card Column Number 42 represents the digit in Core Set Number _____



CORE SET NUMBER



APPENDIX B

THE NEWS-STORY STRUCTURE KIT

Practice Exercise for Producing Student Achievement
Using a News-Story Structure Objective

Instructions

Prepare a 30-minute lesson for your students as follows: Read the Objective and Related Subject Matter, and examine the Practice Exercises. Then prepare to teach the Objective in the manner in which you are most effective. You may select Practice Exercises from the following pages, or prepare your own, whichever you feel are most appropriate to the Objective. You can make notes on these assignment sheets if you wish. Please record the approximate time used for preparation of your lesson:_____.

Objective

Given: Seven factual statements about a news-story;

Students will be able to: Re-order the five most important statements in "inverted pyramid" form, so that the news-story appeals to a high school readership.

Related Subject Matter

The traditional form of news writing in the United States is called the "inverted pyramid." This means that the "most important" statement is written at the beginning of the news-story and that subsequent statements provide the reader convenient exits of decreasing importance all the way to the end of the news-story. This form is in sharp contrast to other forms of written composition, such as essays or short stories, etc., where an author usually begins with incidental details and works to a climax near the end of the composition. The contemporary news writer first anticipates his reader's questions regarding the subject and then answers the questions in the order of their urgency. He first selects the climax, or most important fact, then fills in details with the second most important fact, the third most important, etc. For example, after a basketball game, what question would the high school reader be most likely to ask?

What kind of game was it?
What was the final score?
Who won?

The most urgent question would be who won the game, because neither the final score nor the kind of game it was would satisfy an average high school reader without first knowing who won the game. This is the natural way of telling a story. If someone drowns or there is a car accident, the average person would not begin by telling the events leading up to the incident; rather he would tell the important news first, and then relate the details of how and why.

The reasons for the wide-spread adoption of the inverted pyramid are varied. Some say it had its origin in Civil War days when correspondents used the telegraph for the first time. The war correspondents tried to crowd as much important

information as possible into their first paragraphs for fear that the telegraph line might be cut before completing the transmission. The system was perfected for the contemporary reader, who expects to get to the point of the news in a hurry. There are so many news items competing for attention nowadays that he hasn't time to read much of the newspaper daily. (He is unlike the reader of 1690, who felt no compulsion to get to the point of the news in a hurry for there were fewer items competing for attention, and newspapers appeared only once a month.) Also, if the story is written in inverted pyramid form, the headline writer should not have to look beyond the first paragraph or two to find the words needed for the headline.

Relevance and significance are implied when we say "importance" to the readers of the news-story, but deserve special mention here for clarity. Consider the relevance and significance of the statements subsequent to who won the game:

a chronological summary of the game
the names of the officials
the attendance
the final score
the high-scoring players

The final score and then the high-scoring players would usually generate the most excitement during the game and the most discussion after the game. They are both <u>relevant</u> to who won and <u>significant</u> to the news-story. The chronological summary would then precede attendance and names of officials in order of importance. The attendance could be considered relevant to the game itself--but not to who won the game, and may be cut by the editor for lack of space. The names of officials, on the other hand, could conceivably be linked to who won in some stories involving disputes with officials, and would then be significant to news readers of those stories. To sum up this description, the inverted pyramid news-story should begin with a shout and end with a whisper, but the whisper should be both <u>relevant and significant</u> to the shout.

<u>Practice Exercises</u>

A. Arrange the statements related to the "Lead" in their <u>order of importance</u> to the news-story.

Lead: The greatest marine disaster in the history of the world occurred last night, when the <u>Titanic</u>, the biggest and finest of steamships, shattered herself against an iceberg and sank in less than four hours.

3 Every effort is being made to determine the names of the survivors.

2 Most of the survivors are believed to be women and children.

4 The survivors were picked up by the Cunarder <u>Carpathia</u>.

5 All night, a crowd of anxious relatives and friends of the passengers were massed in front of the Titanic's offices at Number 9 Broadway.

1 Of the 2,200 passengers aboard, only 675 were saved.

B. Re-arrange the facts below, in the order of most to least importance to a news-story.

4 Watching his master walk to safety, Simon, his paws badly bleeding, resigned himself to wait for the stretcher.

5 The sheriff and his deputies were summoned by Donny's father, Fred Brooks, when the pair were discovered missing.

1 A ten-year-old boy and his 165-pound St. Bernard show dog got stuck on a Mt. Baldy ledge last night.

2 Donny Brooks and his dog, Simon Bolivar, after walking up a 1,000-foot hillside, became trapped on a ledge covered with loose shale.

3 Little Donny was rescued as soon as the sheriff's men arrived, but Simon was carried to safety only after a three-hour battle.

C. Re-order the 5 most important facts in the spaces provided, so that they will appear in the inverted pyramid form for readers of your news-story.

Minutes of last Friday's meeting of the Los Angeles Chapter of the Data Processing Management Association contained the following items:

3 Student affiliates are being encouraged by 110 of the 216 international chapters.

5 A manual is being developed by International Headquarters to assist the chapters in their forthcoming student membership drives.

4 Student affiliates are already being sponsored by 14 local chapters--this allows a student to purchase all information from International Headquarters at membership prices.

__ The Long Beach Chapter is starting to sponsor a student club, with the help of Tom Cashman.

2 The proposal is for student membership at a reduced rate.

1 A proposal for high school student membership will be brought before the International Board of Directors at the June meeting.

D. Re-order the 5 most important facts in the spaces provided, so that they will appear in the inverted pyramid form for readers of your news-story.

4 The victims were all scheduled to graduate with the summer class of 1968.

2 The victims have been identified as Howard Horley of 621 Edmonston Road, Mary Smith of 7141 Park Avenue, and Sam Davidson of 111 Holthead Drive.

3 Horley was the driver of the car.

1 Three Main High School students were killed instantly today when their light speedster hit an oncoming express train.

5 "Howard was hurrying so that they would not be late for their fourth-period class," his father said.

__ A crack-down on all drivers of the speedster-type cars was promised by Police Chief Ed Sturgess.

__ The car was reported as traveling greatly in excess of the speed limit.

E. In the group below, identify the four statements you think are most important to the development of the "Lead" of the news-story.

Lead: An incredible stock market tumbled toward chaos today, despite heroic measures by the nation's greatest bankers.

1 Selling of stocks broke all previous records, reaching 16,410,030 shares at the close.

__ Wall Street throbbed with excitement all day.

__ It was a day of tremendous activity, with climaxes punctuating every hour.

2 Losses of 30 points or more were incurred, threatening the credit structure of the country.

__ The wolves raged through Wall Street all day.

__ The older traders "felt it in their bones"--the worst was over!

3 Only an erratic rally in the last hour saved the market from utter chaos.

4 Steel gave way to a $12.00 loss, but, true to its name, failed to crack and snapped back in the last minute.

F. Re-order the 5 most important facts in the spaces provided, so that they will appear in the inverted pyramid form for readers of your news-story. Place a U next to irrelevant items.

Minutes of last Thursday's meeting of the Los Angeles County Board of Supervisors contained the following items:

U One of the members of the Board had to leave early after being told that his wife had been taken ill.

2 The Board voted unanimously that vacations at Green Lake Camp would be subsidized by the County for selected students.

1 The Board voted 4-to-1 to open the Green Lake Camp this summer for senior high school students.

5 Mr. B. Redding, Chairman, said that students needed more recreation facilities.

U The meeting started half an hour late.

3 It was decided that underprivileged students, such as those without fathers, would be granted subsidies automatically.

4 The Board's Secretary said that seniors wanting subsidized vacations must apply to their school principal before April 31.

NAME_____ AGE_____ GRADE_____

SCHOOL_____ INSTRUCTOR_____

You are a manager of a high school newspaper. Your only readers are high school students. Your writers have collected the facts below for two news-stories. For each news-story below:

1. Re-number the five most important facts in the spaces provided, so that they will appear in your news-story in the inverted pyramid form (from 1 to 5).

2. Identify two facts that are unimportant to the news-story by placing a U in the spaces provided.

The Minutes of last Friday's meeting of the Los Angeles Board of Education stated:

___ 1. Other budget cuts were in ground maintenance.
___ 2. The athletic budget was cut by $200,000 to eliminate post-season games.
___ 3. Only six of the seven Board members were present.
___ 4. The Board eliminated all budgeting for Open House Day.
___ 5. The Board abolished sixth-period classes, as part of a $300,000 budget cut.
___ 6. The meeting dragged on for over four hours.
___ 7. The Board considered hopes for restoration of the budget as dim.

The Minutes of last Friday's meeting of the Los Angeles City Council stated:

___ 1. Councilman Van Horn demanded that school parking lots be converted into athletic fields whenever possible, to satisfy more of the needs of the community.
___ 2. The Council acted on receipt of police reports indicating that student parking on campus lots resulted in severe traffic congestion at five Los Angeles City schools.
___ 3. The minutes of the last meeting were approved with an unusual number of corrections.
___ 4. Three Council members voted against the resolution.
___ 5. One principal, Mr. E. B. Sloane, testified that his faculty and staff parking facilities were a little cramped.
___ 6. The meeting was held at City Hall.
___ 7. The Council, in resolution, urged the Los Angeles Board of Education to prohibit students from parking their automobiles on campus parking lots.

APPENDIX C

SUPPLEMENTAL FORMS

Form C-1

Subject-Matter Familiarity Questionnaire

Name_____

1. What subject(s) do you currently teach?_____

2. What subject(s) do you feel most comfortable teaching?

_____

3. Are you acquainted with any of the following subjects?

	Yes	No
Accounting	____	____
Typewriting	____	____
Shorthand	____	____
Business Math	____	____
Punched-Card or Computer Processing	____	____
Business English	____	____
Salesmanship	____	____
Health Education	____	____
Home Economics	____	____
Journalism	____	____
Nursing	____	____
Police Science	____	____
Speech	____	____

Form C-2

Practice Exercise to Aid in Producing Problem-Solving Skills

Purpose:

The purpose of this exercise is to give you practice in producing problem-solving skills as follows:

1. You will be asked to teach to a specified problem-solving objective in a specified period of time.

2. Student achievement of the specified objective is the only result expected, and you are free to use any method that will assist your students toward achieving the problem-solving objective.

3. There will be no observers in your classroom while you are teaching.

4. A paper and pencil post-test will be supplied for your use after the lesson.

Materials:

In this packet is a subject-matter "kit." (Your responses to the Subject-Matter Familiarity Questionnaire indicated that you were unfamiliar with the subject field.) Prepare a 30-minute lesson in the subject field overnight. You should be able to complete your preparation within an hour.

Other Instructions:

1. Time and place for the lesson

2. Directions on the re-assignment of the students to rooms if the instructor will be asked to participate in this part of the project

3. Other supplemental instructions, if any

Form C-3

Post-test Instructions

Erase the blackboard completely and distribute the post-tests from this packet. Write your name on the blackboard. Instruct students to fill in their name, age, school, grade, and your (instructor's) name. Be certain that each student has written his name on the post-test form.

Read aloud to the class the instructions at the top of the form. Allow about fifteen minutes for them to take the test and then collect the post-tests. It is important that you allow each student to finish the test and that you collect them all.

Place the post-tests, together with your subject-matter kit, in the packet. The packets will be collected.

Form C-4

Dean's Rankings

Please rank-order the instructors listed below from 1 to __ , according to your perception of their ability to develop problem-solving skills in their students.

Rank Order	Teacher Name
_____	_____
_____	_____
_____	_____

Form C-5

Name_____

Present position (title and institution)_____

Years at this institution_____

Experience (years taught at each type of institution)

Elementary_____

Secondary_____

2-year college_____

4-year college_____

Graduate course_____

Educational background:

a. Institution	Year(s)	Major(s)	Minor(s)	Degree(s)

b. Approximate number of courses (not units) taken after receiving bachelor's degree _____

c. Approximate number of Education courses (include any taken as undergraduate) _____

Form C-6

Post-study Questionnaire

Thank you again for your cooperation during the recent practice exercise.

So that we may be able to improve future efforts of this kind, would you please relate some of your experiences during the exercise as follows:

	Yes	No
1. Did you consider the exercise worthwhile? In what way?_____	_____	_____
2. Were you short of time or resources during preparation or execution? In what way?_____	_____	_____
3. Did you have any particular difficulties with the subject, other than possible lack of time or resources? In what way?_____	_____	_____
4. Did you have any particular difficulties with any of your students? In what way?_____	_____	_____

5. What did you like about the exercise?

_____

_____

6. What did you dislike about the exercise?

_____

_____

7. How do you feel your students performed in relation to the students in the other classes:

	Subject_____	Subject_____
Upper Quartile	_____	_____
2nd Quartile	_____	_____
3rd Quartile	_____	_____
Lower Quartile	_____	_____

Form C-7 Calculation of

Teacher	A Lesson One Class Mean	B Lesson Two Class Mean	C Lesson One Class Rank	D Lesson Two Class Rank	E Dean's Ranking
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
Sum Total					

F Difference between Cols. C and D	G Difference between Cols. C and E	H Difference between Cols. D and E	I Column F Squared	J Column G Squared	K Column H Squared

$$N(N^2-1) = \boxed{}$$

where N equals the number of instructors

Reliability Coefficient for General Teaching Ability

$$r = 1 - \frac{\text{6 times (sum total for column I)}}{N(N^2-1)}$$

$$r = 1 - \frac{(\quad)}{(\quad)} = \boxed{}$$

Correlation between Dean's Rankings and Lesson One Rankings

$$r = 1 - \frac{\text{6 times (sum total for column J)}}{N(N^2-1)}$$

$$r = 1 - \frac{(\quad)}{(\quad)} = \boxed{}$$

Correlation between Dean's Rankings and Lesson Two Rankings

$$r = 1 - \frac{\text{6 times (sum total for column K)}}{N(N^2-1)}$$

$$r = 1 - \frac{(\quad)}{(\quad)} = \boxed{}$$